8th Grade
Main Rangefinder 1

It is important that you explain and show how you solved the problems on this assessment. If you use a calculator, show how you set up the math.

❶ Manuel, Sam and five of their friends are going to order pizza for dinner. A pizza costs $4.99 plus $0.75 per topping.

a. Find the cost of each pizza they ordered and fill in the appropriate spaces in the chart below. Do not include sales tax.

Toppings	Pizza 1	Pizza 2	Pizza 3	Pizza 4	Pizza 5
Olives					X
Mushrooms					X
Pineapple				X	
Sausage		X			X
Pepperoni		X	X		X
Canadian Bacon		X		X	X
Extra Cheese	X				X
Pizza Cost - without tax	$0.24	$12.49	$0.24	$0.99	$9.49

X = topping was ordered

Inadequate use of symbols and communication skills

b. What is the **total** cost of the five pizzas, including a 5% sales tax? *Show or explain how you found your answer.*

$42.89

c. Each pizza has 8 slices. Sam plans to eat two slices from <u>each</u> pizza. What fraction of all the pizzas does he plan to eat? What percent is this? *Show or explain how you found your answer.*

$\frac{10}{40}$

$8 \times 5 = 40$

$10 - 40 = 30$

Demonstrates basic use of thinking skills

d. Each person pays for his share of the total cost based on the amount of pizza he eats. How much should Sam pay? *Show or explain how you found your answer.*

$4.50

Minimal development of basic skills

Read problems 2, 3, 4 and 5 on the next few pages. Select three problems to answer. Answer ALL of the parts of the three problems you select to answer. Cross out the one problem that you do not choose to answer.

❷ The quilt block pictured below is called a "Bear's Paw." It is made by sewing together squares and triangles. Some pieces are black, while others are white or gray. Use the block to answer the questions.
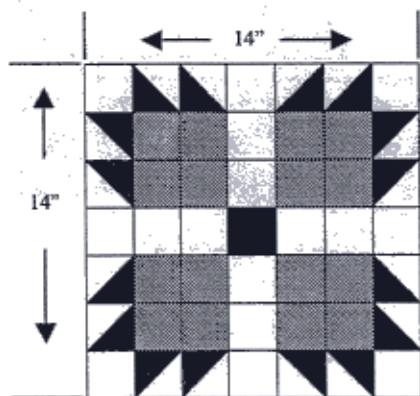
Minimal evidence of understanding of situations

a. If the completed "Bear's Paw" block is 14 inches by 14 inches, what is the area that is shaded black? *Show or explain how you found your answer.*

$8 \frac{1}{2}$ in

b. What fraction of the total "Bear's Paw" block is shaded black? *Show or explain how you found your answer.* 27 in

c. Juanita needs to cut 2 ½ inch by 2 ½ inch squares from a piece of black material that is 44 inches wide and 36 inches long. What is the maximum number of squares she can cut from this piece of material? *Show or explain how you found your answer.* 9 in

❸ Students were surveyed to find out how many
pets their families owned.

a. Use the given data to complete the frequency table.

PETS PER FAMILY

3, 1, 2, 1, 4, 2, 1, 2, 1, 2, 0, 3, 1, 2, 2, 3, 2, 2, 4, 1, 1, 1, 1, 0, 1, 3

Frequency Table for Pets per Family		
Pets per Family	Tally	Frequency

b. Graph or plot this data in the space provided below. Be sure to include appropriate identifying labels.

c. How many families have 2 or more pets? *Show or explain how you found your answer.*

d. What is the mean number of pets per family? What is the mode? *Show or explain how you found your answer.*

4 Ron, Leora and Susan all work at the same restaurant. They get paid an hourly w
as any tips they receive. They each make different wages based on their work ex

> Inadequate use of symbols and communication skills

a. If Ron's hourly wage is $5.00 more than Leora's wage, and Susan's wage is $
less than twice Leora's wage, write an algebraic expression for each of their wag
Be sure to explain your variables.

Ron: **Leora:**   **Susan:**

2-5   20   3 ⌀

b. If Leora's hourly wage is $8.00, what are Ron's and Susan's wages? *Show or explain how
you found your answer.* 2 7

c. If, in one week, Ron worked for 32 hours and got $56.25 in tips, h
Show or explain how you found your answer. 8 ⌀9

> Minimal problem-solving strategies

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5 Roger works for the Department of Fish and Game. To discover how healthy a pond is,
Roger needs an estimate of the number of fish in the pond. He asked his son Mark for help.

a. They captured 8 trout, 6 bass and 3 catfish. They tagged and released the fish. They later
captured 60 fish. Five of the fish in the second capture had tags. About how many fish are
in the pond? *Show or explain how you found your answer.* 55 Pish

> Inappropriate processes

5 – 6⌀ ˃ 55

b. If you go fishing in this pond, what is the probability that the first fish you catch will be a trout?
Show or explain how you found your answer.

Thete the   nolee Troht tane bass $ Catfig

> Lack of process development

c. How many of **each** type of fish are there likely to be in the pond if the ratio of trout to bass to
catfish in the pond is the same as in the first capture? *Show or explain how you found your
answer.* 17

> Significant lack of structure